

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

IN THE CLAIMS

1-27. (Cancelled).

28. (Original) A voltage regulation apparatus for use on an integrated circuit device, comprising:

an automatic process identifier configured to identify a process split of the device;
a memory circuit coupled to the automatic process identifier, the memory circuit configured to store data comprising target voltages for different process splits;
a processing unit;
a power supply; and
a voltage regulator circuit coupled to the memory circuit and to the power supply, the regulator configured to adjust the power supply value according to the automatic process identifier and the memory circuit, the adjusted power supply causing the processing unit to operate substantially at a target frequency.

29. (Original) The apparatus of claim 28, further comprising
a switching device comprising a plurality of inputs and an output, a first one of the inputs of the plurality coupled to the memory circuit and the output coupled to the voltage regulator; and

a closed-loop feedback circuit coupled to a second one of the inputs of the plurality, the feedback circuit configured to adjust the power supply voltage.

30. (Original) The apparatus of claim 29, wherein the closed-loop feedback circuit comprises a critical path replica circuit configured to approximate a critical path of the processing unit.

31. (Original) The apparatus of claim 29, wherein the switching device is configured to select between adjusting the power supply based upon the automatic process identifier and the closed-loop feedback circuit.

32. (Original) The apparatus of claim 30, wherein the closed-loop feedback circuit further comprises a counter for measuring an output frequency of the critical path replica.

33. (Original) The apparatus of claim 28, wherein the memory circuit contains data comprising a plurality of target frequencies, the target frequencies corresponding respectively to each of the target voltages.

34. (Original) The apparatus of claim 32, wherein the memory circuit contains data comprising a plurality of target frequencies, the target frequencies corresponding respectively to each of the target voltages.

35-48. (Cancelled).

49. (Original) An integrated circuit device comprising:

a processing unit;

process identification means for identifying the process split of the integrated circuit;

memory means for storing characterization data of the family of integrated circuit devices to which the integrated circuit device belongs;

means for determining the characterization data for the integrated circuit device using the memory means and the process identification means; and

voltage regulation means for adjusting the supply voltage using the characterization data for the integrated circuit device to achieve a desired target frequency of operation for the processing unit.

50. (Original) The integrated circuit device of claim 49, wherein the memory means includes characterization data for worst case temperature variation for each process split.

51. (Currently Amended) A method of dynamic voltage scaling, comprising:

identifying the process split of an integrated circuit;
storing characterization data of a family of integrated circuit devices to which the integrated circuit device belongs;
determining the characterization data for the integrated circuit device using the stored characterization data of the family of integrated circuit[[s]] devices and the identified process split of an integrated circuit; and
adjusting the supply voltage using the characterization data for the integrated circuit device to achieve a desired target frequency of operation for the processing unit.

52. (Previously Presented) The method of claim 51, wherein the storing of characterization data includes storing characterization data for worst case temperature variation for each process split.

53. (Currently Amended) A computer program product for dynamic voltage scaling, comprising:

instructions stored in a computer readable medium, when executed, the computer readable medium directing the computer to perform the actions of comprising the following code:

~~code for causing a computer to identify~~ identifying the process split of an integrated circuit;

~~code for causing a computer to store~~ storing characterization data of the family of integrated circuit devices to which the integrated circuit device belongs;

~~code for causing a computer to determine~~ determining the characterization data for the integrated circuit device using the stored characterization data of the family of integrated circuits devices and the identified process split of an integrated circuit; and

~~code for causing a computer to adjust~~ adjusting the supply voltage using the characterization data for the integrated circuit device to achieve a desired target frequency of operation for the processing unit.

54. (Currently Amended) A computer program product of claim 53, wherein the ~~code for causing a computer to store~~ action of storing characterization data includes ~~code for~~ storing characterization data for worst case temperature variation for each process split.